

NOT TO BE TAKEN AWAY.

ANNUAL STATISTICAL RETURNS
AND
SHORT NOTES ON VACCINATION
IN
BIHAR AND ORISSA

FOR THE YEAR

1918-1919

BY

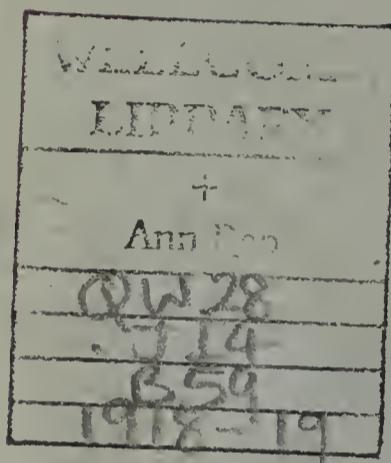
S. N. TIWARI, D.P.H.,

Offg. Sanitary Commissioner, Bihar & Orissa.

PATNA

PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRINTING, BIHAR AND ORISSA
1919.

[Price—Indian, 12 annas; English, 1s.]

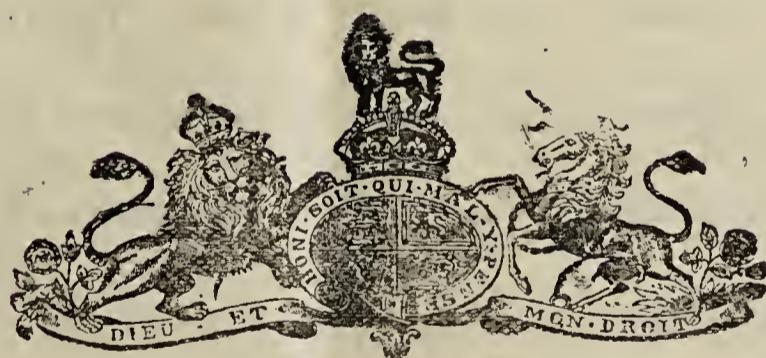


22501899327

ANNUAL STATISTICAL RETURNS
AND
SHORT NOTES ON VACCINATION
IN
BIHAR AND ORISSA
FOR THE YEAR
1918-1919

BY

S. N. TIWARI, D.P.H.,
Offg. Sanitary Commissioner, Bihar & Orissa.



PATNA

PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRINTING, BIHAR AND ORISSA
1919.

[Price—*Indian*, 12 annas; *English*, 1s.]

Agents for the Sale of Books published by the Bihar and Orissa Government.

Agents in India :

(1) Messrs. Thacker, Spink & Co., Calcutta.	(8) Messrs. M. C. Sircar & Sons, 75, Harrison Road, Calcutta.
(2) Messrs. W. Newman & Co., Calcutta.	(9) Proprietor of the Newal Kishore Press, Lucknow.
(3) Messrs. S. K. Lahiri & Co., College Street, Calcutta.	(10) Messrs. M. N. Burman & Co., Bankipore.
(4) Messrs. A. M. & J. Ferguson, Ceylon.	(11) Babu Ram Dayal Agarwala, 184, Katra Road, Allahabad.
(5) Messrs. R. Cambray & Co., 6 and 8-2, Hastings Street Calcutta.	(12) Standard Literature, Co., Ltd., 13/1, Old Court House Street, Calcutta.
(6) Messrs. Thompson & Co., Madras.	(13) Manager of the Indian School Supply Depôt, 309, Bow Bazar Street, Calcutta.
(7) Messrs. D. B. Taraprevala Sons & Co, 103, Meadow Street, Fort, Post Box No. 18, Bombay.	(14) Messrs. Butterworth & Co., Ltd., 6, Hastings Street, Cal- cutta.
	(15) Messrs. Ram Krishna & Sons, Anarkali Street, Lahore.

Agents in England :

(1) Messrs. Constable & Co., 10, Orange Street, Leicester Square, London, W. C.	(7) Messrs. Henry S. King & Co., 65, Cornhill, London, E. C.
(2) Messrs. Kegan, Paul, Trench, Trubner & Co., 68-74, Carter Lane, London, E. C., and 25, Museum Street, London, W. C.	(8) Messrs. Grindlay & Co., 54, Parliament Street, London, S. W.
(3) Mr. B. Quaritch, 11, Grafton Street, New Bond Street, London, W.	(9) Messrs. W. Thacker & Co., 2, Creed Lane, Ludgate Hill, London, E. C.
(4) Messrs. P. S. King, & Son, 2 and 4, Great Smith Street, Westminster, London, S. W.	(10) Messrs. Luzac & Co., 46, Great Russell Street, London, W. C.
(5) Mr. B. H. Blackwell, 50-51, Broad Street, Oxford.	(11) Messrs. Oliver and Boyd, Tweeddale Court, Edinburgh.
(6) Messrs. Deighton Bell & Co., Trinity Street, Cambridge.	(12) Messrs. E. Ponsonby, Ltd., 116, Grafton Street, Dublin.

Agents on the Continent :

(1) M. Ernest Leroux, 28, Rue Bonaparte, Paris, France.	(2) Martinus Nijhoff, The Hague, Holland.
---	---

ANNUAL
VACCINATION REPORT
BIHAR AND ORISSA
for the year.

1918-19.

1. Staff.—Major W. C. Ross, I.M.S., was in charge of the Department from 1st April to the 30th November 1918 and Dr. S. N. Tiwari, from the 1st December 1918 to 31st March 1919.

The office of the Deputy Sanitary Commissioner, North Bihar Circle, was held by Dr. B. P. Mazumdar, throughout the year, and Dr. T. Sebastian, remained in charge of the Chota Nagpur and Orissa Circle and in supervising charge of the Vaccine Depôt during the year.

The office of the Deputy Sanitary Commissioner, South Bihar Circle, was held by :—

- (1) Dr. S. Maitra—from 1st to 30th April 1918.
- (2) Dr. B. P. Mazumdar—from 1st May to 20th September 1918, in addition to his own duties as Deputy Sanitary Commissioner, North Bihar Circle.
- (3) Dr. S. N. Tiwari—from 21st September to 31st March 1919.

The inspecting staff consisted of 20 District Inspectors of Vaccination and 66 Sub-Inspectors of Vaccination (including 3 deputed for duty at the Vaccine Depôt) in addition to the 2 Sub-Assistant Surgeons combining vaccination inspection with other duties in Angul. During the year two additional appointments of Sub-Inspectors were sanctioned for the Dhanbad Subdivision in the district of Manbhum. The total number of Vaccinators employed in the province during the year was 1,059 licensed and 208 paid, against 1,049 licensed and 208 paid in the previous year.

In Municipalities and in the districts of Puri, and Angul, vaccination was done by paid Vaccinators; but otherwise the work throughout the province was carried out under the licensing system, except for the employment of paid Vaccinators for short periods to deal with outbreaks of small-pox.

Heretofore Vaccination, in Sambalpur District, was done by paid Vaccinators; but licensing system was introduced from the last working season.

2. Operations performed.—The total number of operations performed during the year amounted to 972,423 as compared with 1,097,676 last year. The decrease amounts to 125,253 which was due to the widespread prevalence of influenza in the whole of the province during the last working season.

Of the total number of operations in the province, 953,535 were performed by the Vaccination Department as compared with 1,084,031 last year. 914,761 operations were primary and 38,774 revaccinations against 1,055,374 primary and 28,657 revaccinations last year.

There was a decrease of 140,613 in the primary operations and an increase of 10,117 in the revaccination during the year.

Of the total operations performed (953,535), 929,964 equal to 97.52 per cent were successful as compared with 1,061,531 equal to 97.92 last year.

The number of operations performed in Municipalities was 43,537 as compared with 41,362 last year.

The number of successful operations in Municipalities was 35,213 for primary and 2,772 for revaccination, as compared with 35,570 and 3,043 respectively last year. The ratios of success in Municipalities were 96.28 per cent for primary and 39.80 per cent for revaccination as compared with 96.23 per cent for primary and 69.12 for revaccination. The number of operations performed in rural areas was 909,998 as compared with 1,042,669 last year. Of the former, 878,188 were primary and 31,810 revaccination against 1,018,414 primary and 24,255 revaccination last year. The number of successes was 870,804 for primary and 21,175 for revaccination against 1,008,095 for primary and 14,823 for re-vaccination last year; the ratios of successes being 99.15 primary and 66.56 revaccination as compared with 98.98 primary and 61.11 revaccination last year.

3. Vaccination in districts.—There was a fall of 16,825 operations in the Patna Division as compared with last year, which was shared by the district of Shahabad (10,664) and that of Gaya (6,206).

With the exception of the district of Muzaffarpur, there was a general fall in the operations in all other districts of Tirhut Division, viz., Saran 11,806, Champaran 1,447, and Darbhanga 6,527. Muzaffarpur recorded an increase of 902 operations.

All the districts of the Bhagalpur Division recorded a decrease in the number of operations with the exception of Purnea which showed an excess of 5,721 operations due perhaps to less prevalence of influenza there. The marked decrease was in the district of Monghyr (11,856).

In Orissa Division all the districts show a decrease in the number of operations; the greatest being in Sambalpur (9,880) and Cuttack (9,712).

There was a general fall in the number of operations in this Division, the greatest being in Ranchi (14,310) and Manbhum (13,222).

4. Vaccination in towns and compulsory areas.—During the year under report the Vaccination Acts were extended to Garhwa Union in Palamau, Dhanbad in Manbhum and Chakradharpur Municipality in Singhbhum. Statement VII shows that during the year, 17,939 children under one year of age, out of an available number of 26,332 or 68.12 per cent were successfully vaccinated.

During the last three years the towns of Bhagalpur and Darbhanga have shown the smallest proportion of work done and the towns of Gaya, Chapra, Monghyr, Cuttack and Balasore have given unsatisfactory returns.

5. Work done in the Native States under the supervision of the Political Agent.—The following tabulated statement shows the results for the last 13 years :—

Year.					Total number of vaccinations.	Total number of revaccinations.
	1	2	3			
1906-07	165,967	43,498
1907-08	187,150	69,685
1908-09	226,042	97,078
1909-10	269,728	142,911
1910-11	310,962	163,162
1911-12	341,701	179,688
1912-13	387,190	215,438
1913-14	430,720	261,225
1914-15	419,562	260,707
1915-16	454,699	281,913
1916-17	504,948	311,670
1917-18	526,410	330,938
1918-19	426,717	269,970

6. Protection of Infants.—During the year under report the number of children available for vaccination was 944,025 and the number of successful operation was 346,974 equal to 367 per thousand, against 499,705 or 446 per thousand successful operations out of 1,119,606 children available during the last year.

The protection of infants in Municipalities is separately shown in statement VII. It gives a ratio of 681 per thousand of the surviving infant population as compared with 690 in the last year.

7. Incidence and mortality of small-pox.—During the last ten years the total number of deaths from small-pox in the districts of this province has been 75,731.

During the first quinquennium the number of deaths were 29,490 and during the second 46,241. In the last quinquennium the mortality was as follows :—8,979, 14,628, 9,742, 6,687 and 6,205.

The provincial ratios of the mortality from small-pox per 1,000 of population during the last five years have been .22, .42, .28, .19 and .17 respectively.

8. Prevention of small-pox.—Much has been done in the past to prevent small-pox and the mortality from it now, as compared with the pre and early-vaccination days, has been reduced considerably. But it appears from the figures quoted in paragraph above that the decline in the death-rate from small-pox has now come to a degree beyond which it does not show much inclination to fall except in the areas where Vaccination Act has been made compulsory and there the decline is progressive.

Vaccination as a measure for prevention of small-pox has proved its efficacy beyond all doubt and the Vaccination Acts, enforcing compulsory vaccination, have been introduced in all Municipal towns and other important places—like Dhanbad—where life is considered more important and objections to its application are considered to be comparatively few. Opposition to vaccination has also gone down considerably, and I do not see much difference between the opposition offered by the urban and the rural populations. Opposition is now shown not so much to vaccination as to vaccination of an infant before twelve months of age.

The attitude of the people towards vaccination in urban and rural areas being almost the same, I agree with my predecessor in recommending that benefits of the Vaccination Acts be extended to rural areas of the province in the same way as they have been extended to urban areas by making them compulsory throughout the province.

9. Inspection of work.—During the year under report the Deputy Sanitary Commissioners inspected 79,610 primary vaccinations as against 155,456 in the previous year. The decline, in the number of vaccinations inspected, is due to the fact that there was no Deputy Sanitary Commissioner in the South Bihar Circle, for vaccination work.

The inspecting work done during the year by the Deputy Sanitary Commissioners has been comprehensive and valuable. They have submitted reports on the efficiency of the staff and the arrangements of work in 15 districts of the province. Action is being taken on these reports in each case.

The Civil Surgeons of the province inspected 52,467 primary and 6,907 revaccination operations against 65,694 primary and 6,385 revaccination last year. According to the existing system of inspection, vaccinated children are collected from villages, falling in a radius of about five or six miles, at places two or three miles apart, on the road through which the inspecting officer travels. The system of requiring vaccinated children to be brought to fixed places for inspection in an area where Vaccination Act is not compulsory, is illegal; and villagers generally resent in bringing their children for inspection, as the Civil Surgeon of Muzaffarpur remarks that “the system of thorough inspection of the work done in the rural areas has suffered by the spirit of independence pervading villagers—resulting in number of children not being produced—even for short distances for the Civil Surgeon’s personal inspection.” It is not possible for Civil Surgeons to pay more attention to the vaccination work as Major M. H. Thornely, I.M.S., the Civil Surgeon of Cuttack, points out that “the multifarious nature of the duties of the Civil Surgeon of Cuttack renders it quite impossible for him to give the time and attention necessary for directing and supervising the vaccination work of this large district with its difficulties of communication.”

The officers of the subordinate inspecting staff are not trained, nor sufficiently paid to attract better class of men. They cannot, therefore, be trusted much. The only other agency for inspection is that of the Deputy Sanitary Commissioners. Their number is, however, limited to three only for the whole province which is evidently not enough for thorough and detailed inspection of the work in the villages. It does not appear to me possible, therefore, that without increasing the superior inspecting staff, the efficiency of the work can be improved very much.

In this connection I would recommend that the creation of the district sanitary service, which has been lately proposed by Government may be taken up early.

10. Supply of Vaccine.—The Vaccine Depôt at Namkuri supplied the province with vaccine throughout the year.

The following tabulated statement shows the number of doses manufactured, the number of doses issued, the number of doses lost in storage and manufacture and the number of doses in reserve for five years :—

Year.	No. of doses manufactured.	No. of doses issued.	No. of doses lost in storage and manufacture.	No. of doses in reserve.
1	2	3	4	5
1914-15	771,698	541,259	...	230,437
1915-16	3,127,290	1,798,239	...	1,559,488
1916-17	2,842,710	2,017,730	679,294	1,705,174
1917-18	3,778,318	2,250,072	100,306	3,133,114
1918-19	2,156,720	2,333,233	95,000	2,861,601

The number of calves required for operation has been greatly reduced by the improved technique of operation and by better feeding of calves.

The following tabulated statement shows the number of calves purchased or hired, the number of doses manufactured, the average number of doses yielded per calf, the total gross cost, the total revenue and the average net cost per dose for five years :—

Year.	No. of calves purchased or hired.	No. of doses manufactured.	Average No. of doses yielded per calf.	Total gross cost.	Total revenue.	Average net cost per dose.
1	2	3	4	5	6	7
1914-15	507	771,696	1522.08	Rs. 19,367	Rs. ...	Pies. 4.8
1915-16	1,267	3,127,290	2463.26	34,537	4,637	1.8
1916-17	1,129	2,842,710	2517.90	34,936	13,518	1.4
1917-18	886	3,778,318	4264.45	22,183	16,610	.28
1918-19	399	2,156,720	5405.31	29,685	15,962	1.2

The working cost of the Depôt for the year amounted to Rs. 29,685.9-6 against Rs. 22,183.0-11 last year.

Two severe epidemics of Rinderpest broke out during the year under report, and prompt steps were taken to check their spread. There were 120 attacks and 23 deaths and the Depôt had to be closed and calves discharged on both the occasions.

The cost to the Depôt was greater owing to the rise in the price of all materials.

The loss in revenue was due to a fall of about 80,000 doses of Vaccine in the supply to the Native States.

11. Experimental work.—Further experimental work in connection with the manufacture of vaccine was continued during the year. Distilled water was tried as a diluent in place of Glycerine mixture. In the smaller dilutions the pulp and water mixture gave equally good results as the Glycerinated vaccine. In dilutions of 1 in 5 it gave good results when the diluted vaccine was used within two days of the preparation. After this period, the water diluted vaccine appeared to lose potency. The result of the experiment confirms the view that Glycerine serves not only as a diluent but also as a preservative.

Other experiments were done to determine whether crude pulp when rid of moisture by drying and made into vaccine, keeps up potency. The results have been negative. Further experiments will be continued during the rains.

12. Cost of the Department.—The total cost of the Vaccine Department (excluding the Vaccine Depôt) during the year, as detailed in Statement II, was Rs. 1,10,479 or Rs. 1,737 less than the previous year. The decrease in cost was due to the introduction of licensing system of vaccination in the district of Sambalpur.

The cost per successful operation was Re. 0-1-10 against Re. 0-1-8 in the previous year. The increase in rate is due to the fall in the number of operations.

13. General.—The discipline and work of the staff have been gradually improving. Owing to the wide spread influenza epidemic in the province the anticipated improvements could not be effected.

The staff in general worked fairly well. The work done by the Deputy Sanitary Commissioners in inspecting vaccination and reporting on the efficiency of the staff was very useful. The supervision exercised by Dr. T. Sebastian over the Vaccine Depôt at Nainkum has resulted in much improvement of that institution for which he deserves commendation.

S. N. TIWARI,
Offg. Sanitary Commissioner.

STATEMENTS.

Statement No. I.—Showing particulars of Vaccination in the

Number.	District.	Population of district according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Pri
					Male.	Female.	Total.		
1	2	3	4	5	6	7	8		
<i>Patna Division.</i>									
1	Patna ...	... { By paid Vaccinators { By licensed Vaccinators ...	1,609,631	777 { 15 61 { 29,372 27,145 { 58,517 926 { 56,517	6,289 29,372 27,145 58,517	5,880 27,145 58,517 926	12,169 58,517 926 56,517	811 926 811 56,517	11,808 56,517
2	Gaya ...	... { By paid Vaccinators { By licensed Vaccinators ...	2,161,010	458 { 12 82 { 25,279 24,997 { 50,276 613 { 49,690	2,986 25,279 24,997 50,276	2,481 25,279 24,997 613	5,467 50,276 613 49,690	455 613 455 49,690	5,077 49,690
3	Shahabad ...	... { By paid Vaccinators { By licensed Vaccinators ...	3,865,600	426 { 9 75 { 20,153 17,221 { 37,380 408 { 37,346	2,120 20,153 17,221 37,380	1,904 20,153 17,221 408	4,024 37,380 408 37,346	447 408 447 37,346	3,923 37,346
Total of Patna Division		... { By paid Vaccinators { By licensed Vaccinators ...	5,636,301	505 { 36 218 { 74,810 69,363 { 141,173 661 { 143,562	11,395 74,810 69,363 141,173	10,265 74,810 69,363 141,173	21,061 141,173 661 143,562	601 661 601 143,562	20,808 143,562
<i>Tirhut Division.</i>									
4	Saran ...	... { By paid Vaccinators { By licensed Vaccinators ...	2,289,778	853 { 8 7 { 33,520 31,140 { 64,660 743 { 64,660	1,254 33,520 31,140 64,660	1,142 33,520 31,140 743	2,396 64,660 743 64,660	290 743 290 64,660	2,391 64,660
5	Champaran ...	... { By paid Vaccinators { By licensed Vaccinators ...	1,909,385	510 { 4 67 { 24,152 23,304 { 47,356 706 { 47,349	1,579 24,152 23,304 47,356	1,200 24,152 23,304 706	2,770 24,152 23,304 706	694 706 694 706	2,150 47,349
6	Muzaffarpur ...	... { By paid Vaccinators { By licensed Vaccinators ...	2,815,514	987 { 12 75 { 43,065 40,873 { 83,938 1,119 { 83,740	1,637 43,065 40,873 83,938	1,610 43,065 40,873 1,119	3,247 43,065 40,873 83,740	270 83,740 270 83,740	3,122 83,740
7	Darbhanga ...	... { By paid Vaccinators { By licensed Vaccinators ...	2,929,682	875 { 7 88 { 43,384 40,841 { 84,225 937 { 84,189	1,331 43,384 40,841 84,225	1,187 43,384 40,841 937	2,518 43,384 40,841 937	359 937 359 937	2,487 84,189
Total of Tirhut Division		... { By paid Vaccinators { By licensed Vaccinators ...	9,973,359	791 { 31 317 { 141,121 136,058 { 280,179 883 { 279,938	5,801 141,121 136,058 280,179	5,139 141,121 136,058 280,179	10,940 141,121 136,058 280,179	353 883 353 883	10,150 279,938
<i>Bhagalpur Division.</i>									
8	Monghyr ...	... { By paid Vaccinators { By licensed Vaccinators ...	2,131,381	513 { 8 30 { 26,852 25,508 { 52,358 1,745 { 52,353	2,181 26,852 25,508 52,358	2,153 26,852 25,508 1,745	4,336 26,852 25,508 52,358	584 26,852 25,508 1,745	4,149 52,353
9	Bhagalpur ...	... { By paid Vaccinators { By licensed Vaccinators ...	2,139,318	566 { 11 63 { 27,453 26,563 { 51,021 857 { 51,007	1,616 27,453 26,563 51,021	1,431 27,453 26,563 857	3,047 27,453 26,563 51,021	277 27,453 26,563 857	2,790 51,007
10	Purnia ...	... { By paid Vaccinators { By licensed Vaccinators ...	1,989,637	398 { 11 52 { 27,875 24,103 { 51,978 909 { 42,826	4,733 27,875 24,103 51,978	2,531 27,875 24,103 909	7,269 27,875 24,103 51,978	631 51,978 631 909	1,889 42,826
11	Santal Parganas ...	... { By paid Vaccinators { By licensed Vaccinators ...	1,882,781	341 { 6 62 { 23,105 23,432 { 45,537 734 { 44,618	8.0 23,105 23,432 45,537	734 23,105 23,432 734	1,580 23,105 23,432 734	243 23,432 243 734	1,470 44,618
Total of Bhagalpur Division		... { By paid Vaccinators { By licensed Vaccinators ...	8,143,117	437 { 33 207 { 105,290 98,604 { 203,894 1,081 { 193,834	9,382 105,290 98,604 203,894	6,650 105,290 98,604 203,894	16,232 105,290 98,604 203,894	459 98,604 459 1,081	10,316 193,834
<i>Orissa Division.</i>									
12	Cuttack ...	... { By paid Vaccinators { By licensed Vaccinators ...	2,100,139	577 { 11 67 { 25,948 22,728 { 43,676 726 { 46,956	4,900 25,948 22,728 43,676	2,855 25,948 22,728 726	7,755 25,948 22,728 46,956	705 25,948 22,728 46,956	3,777 46,956
13	Balasore ...	... { By paid Vaccinators { By licensed Vaccinators ...	1,055,568	506 { 4 30 { 11,474 9,649 { 21,123 704 { 18,693	761 11,474 9,649 21,123	437 11,474 9,649 704	1,201 11,474 9,649 21,123	300 9,649 21,123 704	722 18,693
14	Angul ...	... By paid Vaccinators	190,405	118 { 12 12 { 4,114 3,398 { 7,542 628 { 4,308	4,114 4,114 3,398 7,542	3,398 4,114 3,398 7,542	7,542 4,114 3,398 7,542	628 4,114 3,398 7,542	4,308 4,308
15	Puri ...	... By paid Vaccinators	1,023,402	409 { 29 29 { 18,806 15,803 { 34,609 1,193 { 34,237	18,806 18,806 15,803 34,609	15,803 18,806 15,803 34,609	34,609 18,806 15,803 34,609	1,193 18,806 1,193 34,609	34,237
16	Samalpur ...	... { By paid Vaccinators { By licensed Vaccinators ...	744,193	194 { 4 29 { 7,583 7,581 { 15,119 522 { 15,069	117 7,583 7,581 15,119	96 7,583 7,581 522	223 7,583 7,581 522	50 7,581 50 522	193 15,069
Total of Orissa Division		... { By paid Vaccinators { By licensed Vaccinators ...	5,131,707	373 { 60 126 { 28,741 22,589 { 51,330 855 { 43,302	28,741 45,010 39,908 84,918	22,589 45,010 39,908 84,918	51,330 45,010 39,908 84,918	855 45,010 855 673	43,302 84,918

districts of Bihar and Orissa during the year 1918-19.

Under one year.	Primary Vaccination.			Revaccination.			Percentage of successful cases in which the results were known.	Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.	Average annual number of persons successfully vaccinated during previous five years.	Average annual number of deaths from small-pox during previous five years.				
	Successful			Revaccination.											
	One year and under six years.	Total of all ages,	Unknown.	Total.	Successful.	Unknown.	Primary.	Revaccination.	Percentage of unknown cases to total cases.	Average annual number of persons successfully vaccinated during previous five years.	Average annual number of deaths from small-pox during previous five years.				
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
5,999	5,116	11,296	259	361	146	...	97.80	40.44	42.58	2.10	...	62,197	38.64	584	.36
21,098	34,608	56,262	66	...	...	...	99.66	...	0.11	...	...	...	...	...	...
2,239	2,625	5,023	12	390	370	5	99.56	96.10	25.9	1.23	1.28	63,539	30.32	695	.32
16,636	31,809	40,420	62	577	435	41	99.58	81.15	12	7.10	7.10	56,788	30.43	470	.25
2,409	1,308	3,858	26	101	76	4	98.99	78.35	22.31	1.66	3.96	...	...	...	...
12,774	21,549	37,168	22	34	12	6	99.63	42.88	0.05	17.64	17.64	...	...	...	...
10,647	9,030	20,177	297	852	592	9	98.37	70.22	29.11	1.42	1.05	184,524	32.73	1,749	.31
50,508	88,146	142,870	150	611	417	47	99.62	79.25	10	7.69	7.69	...	...	...	...
1,065	1,137	2,202	46	5	4	1	93.91	100.00	28.99	1.92	1.20	78,930	34.47	362	.15
22,009	41,589	63,628	592	...	...	...	99.31	...	1.91	...	...	...	...	...	...
1,187	868	2,095	15	629	309	45	98.12	52.92	21.06	1.69	7.15	59,370	31.05	198	.10
15,829	30,668	47,216	67	7	7	...	99.86	100.00	14	...	...	...	...	...	...
1,744	1,239	2,985	48	125	35	11	97.10	30.70	30.34	1.53	8.80	97,514	34.26	368	.12
22,421	60,503	83,220	18	198	112	2	99.40	57.14	02	1.01	1.01	...	...	...	...
772	1,687	2,466	6	31	15	...	91.39	48.38	29.51	2.24	...	85,102	32.40	645	.22
18,467	65,382	83,948	27	36	30	...	99.66	83.33	03	...	...	...	...	...	...
4,768	4,931	9,748	115	790	363	57	97.14	49.52	28.89	1.13	7.21	330,000	33.17	1,573	.15
78,786	198,092	277,912	704	211	149	2	99.52	62.31	25	82	82	...	...	...	...
1,813	2,223	4,125	16	187	97	2	99.80	52.43	26.54	1.38	1.00	80,473	37.75	730	.34
17,344	34,002	52,352	...	5	2	...	99.99	40.60	...	...	...	...	...	...	...
1,140	1,492	2,660	98	248	123	26	98.48	55.40	27.59	3.50	10.48	72,125	33.71	645	.30
24,920	29,002	53,963	5	14	11	...	99.93	78.71	...	009	...	...	...	...	...
945	891	1,860	3	5,280	2,868	89	99.06	51.10	27.24	1.16	1.03	51,559	27.42	755	.37
21,883	20,580	42,611	33	9,152	6,870	21	99.52	75.06	07	22	22	...	...	...	...
555	777	1,434	11	104	39	11	94.26	4.33	26.77	74	10.89	55,821	29.11	530	.28
25,523	18,708	41,472	125	859	517	2	99.60	58.15	28	22	22	...	...	...	...
4,483	5,386	10,070	18	5,916	3,127	127	98.33	51.01	26.27	1.24	2.14	262,988	32.29	2,660	.33
89,670	103,102	193,378	163	10,030	7,100	23	98.28	73.72	08	228	228	...	...	...	...
1,188	2,095	3,571	170	3,973	1,060	759	99.08	33.24	24.58	4.79	19.08	94,603	44.85	953	.45
18,956	28,059	46,358	437	1,720	607	421	99.65	46.72	...	24.47	24.47	...	...	...	...
258	370	685	10	479	203	96	96.65	77.28	19.82	1.38	17.93	41,785	39.58	460	.48
3,064	13,198	18,390	243	2,427	1,550	513	99.11	80.98	1.29	21.13	21.13	...	...	...	...
2,031	1,999	4,039	108	3,174	2,712	94	94.81	89.05	33.85	2.47	2.90	8,290	41.60	7	.03
10,123	20,136	33,138	745	372	226	70	95.92	71.83	32.92	2.17	18.81	36,510	35.67	244	.23
160	38	193	...	25	1	9	100.00	6.25	20.64	...	36.00	23,702	31.81	324	.43
11,199	3,729	14,954	80	50	37	...	99.76	74.00	53	...	...	...	...	...	...
13,760	21,638	41,631	1,033	8,028	4,205	1,028	98.49	61.35	24.88	2.38	12.80	204,904	39.92	1,988	.33
34,119	42,980	79,601	760	4,197	2,191	934	99.54	67.23	...	94	22.25	...	...	...	...

Number.	District.	Population of district according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Pr Total.
					Male.	Female.	Total.		
1	2	3	4	5	6			7	8
<i>Chota Nagpur Division.</i>									
17	Hazaribagh ...	... { By paid Vaccinators ... } 1,288,609	183	{ 4 682 638 1,315 328 1,223					
		... { By licensed Vaccinators ... }		{ 45 17,056 16,334 33,390 742 33,385					
18	Ranchi ...	... { By paid Vaccinators ... } 1,387,073	194	{ 3 2,125 681 2,806 935 1,305					
		... { By licensed Vaccinators ... }		{ 50 15,195 14,696 29,891 598 28,958					
19	Palamu ...	... { By paid Vaccinators ... } 687,710	139	{ 4 1,385 651 2,036 509 754					
		... { By licensed Vaccinators ... }		{ 27 8,032 7,411 15,443 572 14,719					
20	Manbhum ...	... { By paid Vaccinators ... } 1,547,576	373	{ 24 6,541 5,025 11,566 481 10,022					
		... { By licensed Vaccinators ... }		{ 48 14,630 13,049 27,679 576 26,598					
21	Singhbhum ...	... { By paid Vaccinators ... } 694,394	178	{ 6 957 528 1,485 217 785					
		... { By licensed Vaccinators ... }		{ 21 7,673 6,925 14,598 695 14,380					
Total of Chota Nagpur Division.									
		... { By paid Vaccinators ... } 5,605,362	206	{ 41 11,690 7,518 19,208 468 14,089					
		... { By licensed Vaccinators ... }		{ 191 62,586 58,415 121,001 633 118,041					
Total of Vaccine Department.									
		... { By paid Vaccinators ... } 34,489,846	414	{ 204 67,009 52,361 119,370 585 98,665					
		... { By licensed Vaccinators ... }		{ 1,059 431,817 402,348 834,165 787 816,096					
		Total		{ 1,263 498,826 454,709 953,535 754 914,761					
Total Dispensary Department									
		... ...	...	1 66 75 141 139					
Total Railways									
		... ...	...	... 593 276 869 ... 732					
Total Cooly Department									
		... ...	...	1 2,951 2,192 5,143 (a) 2,323 1,183					
Total Jails and Cantonments									
		... ...	...	2 12,187 548 12,735 (b) 400 2,269					
Grand Total									
		... ...	...	1,267 514,623 457,800 972,423 768 919,084					

(a) Balasore only.

(b) Cantonments only.

Primary Vaccination.				Re-vaccination.				Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.		Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.	
Successful.																	
Under one year.	Over one and under six years.	Total of all ages.	Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Number.	Rate per 1,000.	Number.	Rate per 1,000.			
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
541	648	1,205	5	92	60	15	98.93	77.01	27.65	41	16.30	45,739	35.49	214	.16		
19,566	13,515	33,346	1	5	...	...	99.98	...	...	...	...	45,739	35.49	214	
906	382	1,298	...	1,501	751	9	99.46	50.03	22.97	...	50	49,364	35.59	71	.05		
22,649	6,109	28,958	1	932	753	12	100.00	81.84	81.84	003	1.28	49,364	35.59	71			
240	412	703	23	1,282	1,227	33	96.16	98.23	29.76	3.05	2.57	26,806	38.98	79	.11		
9,822	4,614	14,661	52	724	698	7	99.95	97.35	97.35	35	93	26,806	38.98	79			
1,900	6,668	8,922	654	1,544	998	112	95.23	70.11	24.42	6.52	7.25	58,082	37.53	419	.27		
18,652	12,794	26,522	25	1,081	467	65	99.80	45.96	45.96	09	6.01	58,082	37.53	419			
356	380	745	9	700	323	71	96.00	52.07	22.38	1.14	10.57	20,846	30.02	113	.18		
10,341	3,896	14,298	24	218	100	1	99.42	45.87	45.87	16	45	20,846	30.02	113			
4,003	8,500	12,873	691	5,119	3,362	253	96.08	66.09	24.62	4.94	4.94	200,837	35.82	896	.16		
76,230	40,958	117,785	103	2,960	2,018	85	99.87	70.19	70.19	08	2.87	200,837	35.82	896			
37,661	52,494	94,511	2,264	20,705	11,739	1,474	98.03	61.04	26.96	2.29	7.11	1,184,159	34.33	8,866	.25		
329,313	473,374	811,506	1,880	18,069	12,208	1,091	99.66	71.90	71.90	23	6.03	1,184,159	34.33	8,866			
346,974	525,868	906,017	4,144	38,774	23,947	2,565	99.49	66.13	66.13	45	6.61						
50	89	139	...	2	...	2	100.00	...	...	...	100.00	...	...	...	...
606	24	630	2	137	93	5	86.30	70.45	...	27	3.64	...	...	...	...
...	200	606	577	3,960	2,214	1,746	100.00	100.00	...	48.77	44.00	...	...	...	...
222	149	1,902	181	10,466	6,822	602	91.91	69.16	...	7.97	5.75	...	...	...	...
347,852	526,330	909,294	4,904	53,339	33,076	4,920	99.46	68.31	...	53	9.22	...	...	...	...

Summary.

	Total number of persons vaccinated.		Total number of operations performed.		Percentage of successful cases in which the results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccinations per 1,000 of population.	Total cost of Department.	Average cost of each successful case.
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under 6 years.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BY SPECIAL STAFF.													
Statement (I) ...	9,14,761	38,774	914,761	38,774	99.49	66.13	1,263	764	346,974	525,888			Rs. a. p.
BY DISPENSARY STAFF.													
Statement III ...	139	2	139	2	100.00	...	(a) 1	139	50	89	26.96	110,479 5 6	0 1 10
BY OTHER AGENCIES.													
Railways, Cooly Depôt, Jails and Cantonments.	4,184	14,563	4,184	14,563	91.64	74.84	(b) 3	1,047	828	373			
Total ...	9,19,084	53,339	919,084	53,339	99.46	68.81	1,267	769	347,852	526,330	26.96	110,479 5 6	0 1 10

(a) Darbhanga only.

(b) Cooly Depôt and Cantonments only.

STATEMENT II.

Statement No. II.—Showing the cost of vaccination in the

No.	Circle and district.	European supervising officer.	Expen											
			Pay.	Native supervising officer.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Clerks.	Pay.	Peons, etc.	Pay.	Pay.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	Pay.
PATNA DIVISION.														
1	Patna	...	...	...	6	1,821 11 4	16	1,399 0 0	61	...	...	...	1	36 0 0
2	Gaya	...	...	...	5	1,881 0 0	12	1,133 2 9	82	...	...	...	2	144 0 0
3	Shahabad	...	...	...	5	2,302 9 4	9	1,091 9 3	75	...	...	...	...	...
	Total of Patna Division	...	...	...	16	6,005 4 8	37	3,623 12 0	218	...	...	...	3	180 0 0
TIRHUT DIVISION.														
4	Saran	...	...	...	4	2,053 0 0	8	660 0 0	87	180 0 0	...	...	...	...
5	Champanar	...	...	...	3	1,162 11 10	4	412 8 0	67	7 8 0	...	...	...	...
6	Muzaffarpur	...	...	...	4	1,460 0 0	12	764 10 8	75	69 15 7	...	...	...	...
7	Darbhanga	...	...	...	4	1,456 2 8	8	580 0 0	88	...	1	60 0 0	...	...
	Total of Tirhut Division	...	...	...	15	6,131 14 6	32	2,417 2 8	317	257 7 7	1	60 0 0	...	...
BHAGALPUR DIVISION.														
8	Mohghyr	...	...	...	4	1,532 0 0	8	713 0 0	30	...	...	...	2	108 0 0
9	Bhagalpur	...	...	...	5	2,664 5 7	11	1,198 6 0	63	...	...	...	...	...
10	Purnea	...	...	...	4	1,424 5 0	11	1,282 12 11	52	...	...	...	...	...
11	Santal Parganas	...	...	...	7	2,448 3 3	6	777 0 0	62	...	...	...	...	...
	Total of Bhagalpur Division...	...	...	...	20	8,068 13 10	36	3,971 2 11	207	...	...	...	2	108 0 0
ORISSA DIVISION.														
12	Cuttack	...	...	...	4	1,432 10 2	11	1,271 0 8	67	...	...	...	...	...
13	Balasore	...	...	...	3	1,398 2 5	5	479 0 0	30	20 0 0	...	...	...	...
14	Angul	...	...	...	3	2,592 6 0	12	1,653 12 0	...	...	...	...	...	...
15	Puri	...	...	...	3	1,117 0 0	29	3,658 4 0	...	...	...	...	...	...
16	Sambalpur	...	...	...	3	1,067 8 0	4	1,121 0 10	29	...	...	...	2	10 0 0
	Total of Orissa Division	...	...	...	16	7,607 10 7	61	8,183 1 6	126	20 0 0	...	...	2	10 0 0
CHOTA NAGPUR DIVISION.														
17	Hazaribagh	...	...	...	4	1,483 1 0	4	317 3 5	45	...	...	...	...	...
18	Ranchi	...	...	...	5	1,646 0 0	4	541 0 0	50	...	...	...	...	...
19	Palamau	...	...	...	3	1,198 8 6	4	489 14 10	27	...	...	...	...	...
20	Manbhum	...	...	...	3	1,313 0 0	24	2,020 1 11	48	...	...	...	...	...
21	Singhbhum	...	...	...	3	1,252 13 9	6	334 12 11	21	...	...	...	...	...
	Total of Chota Nagpur Division	...	...	...	18	6,893 7 3	42	3,703 1 1	191	...	...	...	...	...
	Total of Vaccine Circle	...	...	...	85	34,707 2 10	208	21,898 4 2	989	277 7 7	1	60 0 0	7	298 0 0
ESTABLISHMENT OF THE DEPUTY SANITARY COMMISSIONER, NORTH BIHAR CIRCLE.														
	Ditto SOUTH BIHAR CIRCLE	...	...	...	1	2,820 0 0	...	.....	...	...	2	969 0 0	3	293 6 7
	DITTO CHOTA NAGPUR AND ORISSA CIRCLE,	...	...	...	1	7,456 8 9	...	.....	...	...	2	805 14 1	2	192 0 0
	Total	...	...	...	3	17,105 10 5	...	.....	...	...	6	2,696 2 0	7	710 13 3
	Total of Province	...	...	...	88	51,812 13 3	208	21,898 4 2	1,059	277 7 7	7	2,756 2 0	14	1,008 13 3

Province of Bihar and Orissa during the year 1918-19.

Total pay of establishment.	Paid from											Number of all successful vaccinations and re-vaccinations.	Average cost of each successful case.						
	Travelling allowance.		Contingencies.			Imperial Fund.		Provincial Fund.		Local Fund.		Municipalities.		Native States.		Total.			
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29		
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.			
3,256 11 4	1,223 14 0	...	207 7 0	4,689 0 4	...	3,182 11 10	480 0 0	1,025 4 6	...	4,688 0 4	68,535	0 1 1							
3,158 2 9	1,376 5 4	...	258 13 3	4,793 6 4	...	3,377 5 4	806 8 9	609 7 3	...	4,793 5 4	56,114	0 1 4							
3,394 2 7	401 15 8	...	199 4 3	3,995 6 6	...	2,827 3 0	480 0 0	688 3 6	...	3,995 6 6	41,625	0 1 6							
9,809 0 8	3,002 3 0	...	635 8 6	13,476 12 2	...	9,387 4 2	1,766 8 9	2,323 15 3	...	13,476 12 2	166,274	0 1 3							
2,693 0 0	463 13 0	...	206 2 0	3,562 15 0	...	2,616 18 0	180 0 0	766 2 0	...	3,562 15 0	66,443	0 0 10							
1,582 11 10	1,135 9 8	...	92 2 6	2,810 8 0	...	2,390 7 6	120 0 0	300 0 6	...	2,810 8 0	50,191	0 0 10							
2,294 10 3	1,311 6 3	...	212 14 0	3,818 14 6	...	2,084 4 3	69 15 7	764 10 8	...	3,818 14 6	86,634	0 0 8							
2,096 2 8	1,085 2 3	...	121 0 0	3,302 4 11	...	2,691 4 11	160 0 0	511 0 0	...	3,302 4 11	86,555	0 7 0							
8,866 8 9	3,905 15 2	...	632 2 6	13,494 10 5	...	10,622 13 8	529 15 7	2,341 13 2	...	13,494 10 5	289,853	0 0 9							
2,353 0 0	1,407 0 0	...	192 0 0	3,952 0 0	...	3,011 0 0	261 0 0	680 0 0	...	3,952 0 0	56,576	0 1 1							
3,862 11 7	612 14 0	...	213 5 1	4,688 14 8	...	3,371 6 7	574 8 0	743 0 1	...	4,688 14 8	59,034	0 1 3							
2,707 1 11	1,262 11 7	...	132 7 9	4,102 5 3	...	2,747 0 7	610 12 11	744 7 9	...	4,102 5 3	54,209	0 1 1							
3,225 3 3	2,061 2 2	...	173 3 0	5,459 8 5	...	4,604 3 5	270 0 0	565 5 0	...	5,459 8 5	40,659	0 1 10							
12,148 0 9	5,343 11 9	...	710 15 10	18,202 12 4	...	13,733 10 7	1,716 4 11	2,752 12 10	...	18,202 12 4	216,478	0 1 4							
2,703 10 10	1,024 14 11	...	198 5 6	3,926 15 3	...	2,547 9 1	588 5 1	791 1 1	...	3,926 15 3	51,845	0 1 1							
1,897 2 5	219 14 3	...	60 0 0	2,177 0 8	...	1,698 0 8	239 0 0	240 0 0	...	2,177 0 8	20,942	0 1 7							
4,246 2 0	737 10 0	...	23 8 3	5,007 4 3	...	5,007 4 3	...	...	...	5,007 4 3	6,751	0 11 10					
4,775 4 0	1,222 8 8	...	86 11 0	6,081 7 8	...	2,420 0 8	3,502 4 0	162 3 0	...	6,081 7 8	33,543	0 2 11							
2,198 8 10	817 9 10	...	39 5 6	3,055 8 2	...	1,975 6 8	881 8 0	198 9 6	...	3,055 8 2	15,361	0 3 2							
15,820 12 1	4,022 9 8	...	407 14 3	20,251 4 0	...	13,648 5 4	5,211 1 1	1,391 13 7	...	20,251 4 0	1,28,442	0 2 6							
1,800 4 5	1,056 5 6	...	89 1 6	2,945 11 5	...	2,628 8 0	56 12 4	260 7 1	...	2,945 11 5	35,632	0 1 4							
2,187 0 0	1,082 14 0	...	60 0 0	3,329 14 0	...	2,788 14 0	...	541 0 0	...	3,329 14 0	31,870	0 1 8							
1,688 7 4	894 2 3	...	49 2 0	2,631 11 7	...	2,141 12 9	286 6 10	203 8 0	...	2,631 11 7	29,472	0 2 1							
3,333 1 11	848 1 4	...	70 0 0	4,251 3 3	...	2,197 5 4	1,823 6 6	230 7 6	...	4,251 3 3	37,807	0 1 9							
1,587 10 8	1,665 8 9	...	52 0 0	3,305 3 5	...	3,090 12 10	...	214 6 7	...	3,305 3 5	15,542	0 3 4							
10,596 8 4	5,546 15 10	...	320 3 6	16,463 11 8	...	12,847 4 11	2,166 9 8	1,449 13 1	...	16,463 11 8	1,41,323	0 1 10							
57,240 14 7	21,911 7 5	...	2,736 12 7	81,889 2 7	...	60,239 6 8	11,390 8 0	10,259 3 11	...	81,889 2 7	9,42,370	0 1 4							
8,385 12 3	3,038 2 9	...	548 11 7	11,972 10 7	...	11,972 10 7	...	...	...	11,972 10 7	...	...					
3,582 6 7	1,174 2 9	...	524 15 8	5,281 9 0	...	5,281 9 0	...	...	...	5,281 9 0	...	...					
8,544 6 10	2,591 8 6	...	200 0 0	11,335 15 4	...	11,335 15 4	...	...	...	11,335 15 4	...	...					
20,512 9 8	6,803 14 0	...	1,273 11 3	28,590 2 11	...	28,590 2 11	...	...	...	28,590 2 11	...	...					
77,753 8 3	28,715 5 5	...	4,010 7 10	1,10,479 5 6	...	88,829 9 7	11,390 8 0	10,259 3 11	...	1,10,479 5 6	9,42,370	0 1 10							

'B—DISPENSARY VACCINATION.

Statement No. III.—Showing Dispensary Vaccination in the Province of Bihar and Orissa during the year 1918-19.

District.	1	2	3	4	5	6	Primary vaccination.			Re-vaccination.			Percentage of successful cases in which the results were known.	Percentage of unknown cases to total cases.		
							Total.	Under one year.	Successful.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
Patna	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Gaya	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Shahabad	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Saran	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Champanar	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Muzaffarpur	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Darbhanga	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Monghyr	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Bhagalpur	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Purnea	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Santil Parganas	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Cuttack	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Balasore	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Angul	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Puri	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Sambalpur	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Hazaribagh	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Ranchi	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Palamau	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Manbhum	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Singhbhum	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00
Total	...	1	1	141	141	139	50	89	139	2	2	2	100.00	...	...	100.00

COMPARATIVE STATEMENT No. IV.

Comparative Statement No. IV.—Showing the number of persons primarily vaccinated, and the number of those per-

sons who were successfully vaccinated in the Province of Bihar and Orissa in each of the undermentioned official years.

vaccinated.

1913-14		1914-15		1915-16		1916-17		1917-18		1918-19	
Total number.	Number successfully vaccinated.										
10	11	12	13	14	15	16	17	18	19	20	21
...	...	649	515	10,277	10,046	3,963	3,441	6,984	6,050	6,637	5,941
44,167	42,480	47,235	45,310	43,099	41,651	38,645	37,226	37,586	36,107	36,573	35,213
82,592	81,790	76,264	75,266	94,056	84,626	80,353	73,103	82,772	77,911	59,639	56,495
186	186	178	176	285	215	202	202	181	177	139	139
1,149,467	1,143,922	1,114,753	1,109,554	1,065,023	1,059,266	922,991	913,264	931,549	926,281	816,096	811,506
1,276,412	1,268,368	1,239,079	1,230,821	1,212,740	1,195,824	1,046,154	1,027,236	1,059,072	1,046,526	919,084	909,294

Statement No. V.—Showing particulars of vaccination

District.	Total number of persons vaccinated.	Total number inspected—								Percentages of		
		By Deputy Sanitary Commissioners or Civil Surgeons.				By Native Superintendents or other Inspecting Officers.				By Deputy Sanitary Civil		
		Deputy Sanitary Commissioners.		Civil Surgeons.		District Inspectors.		Sub-Inspectors.		Deputy Sanitary Commissioners.		
1	2	3	4	5	6	7	8	9	10	11	12	13
Patna	68,726	1,127	...	...	619	290	21,018	...	21,145	...	...	...
Gaya	55,073	1,583	...	...	...	...	11,588	258	28,391	906	...	...
Shahabad	41,447	471	...	...	2,368	...	3,153	...	8,889	...	...	...
Saran	67,255	705	5,034	...	6,579	527	17,167	...	28,020	...	7.48	...
Champaran	50,041	983	3,904	...	5,408	347	6,880	...	12,012	...	7.80	...
Muzaffarpur	86,869	967	6,795	...	9,413	574	15,094	...	21,592	2	7.82	...
Darbhanga	86,831	315	8,655	...	4,032	226	18,552	11	30,056	...	9.96	...
Monghyr	56,502	192	85	...	3,118	...	8,934	32	15,928	31	15	...
Bhagalpur	56,811	3,849	8,150	...	6,891	...	16,503	...	35,345	2	14.34	...
Purnea	44,715	14,532	8,538	...	1,193	34	4,685	589	10,104	1,982	19.09	...
Santal Parganas	46,203	1,207	10,442	...	1,463	...	5,002	...	15,324	514	22.60	...
Cuttack	50,853	6,044	4,863	...	564	198	8,010	820	11,284	195	9.56	...
Balasore	19,995	4,931	2,501	...	314	318	2,127	61	2,889	133	12.51	...
Angul	4,368	3,174	2,017	...	1,082	...	1,346	546	1,779	1,297	46.17	...
Puri	34,374	427	3,871	...	341	54	9,496	...	14,594	...	11.27	...
Sambalpur	15,268	285	2,286	...	1,197	206	4,382	...	4,658	...	14.97	...
Hazaribagh	35,304	575	...	...	2,720	...	6,294	...	11,965	...	...	...
Ranchi	30,369	2,440	3,950	...	1,095	...	2,429	...	11,847	267	13.00	...
Palamau	16,258	4,505	...	...	2,189	2,843	3,519	49	7,322	79	...	...
Manbhum	36,630	3,712	3,106	...	469	1,131	362	...	2,845	...	8.47	...
Singhbhum	15,192	1,112	5,410	...	1,412	159	3,664	221	8,237	246	85.61	...
TOTAL	919,081	53,339	79,610	...	52,467	6,907	170,405	2,087	304,224	5,844	8.66	...

verified by Inspecting Officers during the year 1918-19.

Inspection to total number vaccinated.						Percentage of cases found successful to total number inspected.						Percentage of successful cases reported by vaccinators.			
Commissioners or Surgeons.		By Native Superintendents or other Inspecting Officers.		By Deputy Sanitary Commissioners or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.									
Civil Surgeons.		District Inspectors.	Sub-Inspectors.	Deputy Sanitary Commissioners.	Civil Surgeons.	District Inspectors.	Sub-Inspectors.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
·90	25·73	80·58	...	30·76	...	...	...	97·25	52·75	97·85	...	98·36	...	86·81	55·72
...	...	21·04	16·24	51·55	62·72	...	...	...	...	94·07	94·13	90·54	43·57	99·37	87·53
5·71	...	7·67	...	21·44	...	...	...	95·69	...	99·46	...	98·22	...	88·05	60·24
9·78	74·75	25·60	...	41·66	...	94·16	...	98·58	59·57	98·70	...	92·20	...	96·71	79·96
10·80	35·30	13·74	...	24·04	...	99·23	...	99·79	50·14	99·65	...	99·26	...	90·32	49·81
1·08	59·35	17·37	...	24·85	20	84·93	...	95·52	61·81	96·38	...	95·11	...	93·20	45·51
4·64	71·74	21·37	24·44	34·61	...	98·64	...	99·25	61·76	99·42	95	97·92	...	99·59	44·45
5·51	...	15·81	16·66	28·19	16·14	100·00	...	99·83	...	99·76	53·12	99·41	35·48	99·94	51·53
12·12	...	29·04	...	62·21	·05	98·25	...	99·88	...	98·61	...	96·32	...	99·80	56·01
2·64	·23	11·14	4·02	22·50	13·62	79·19	...	91·14	76·46	98·37	53·51	91·29	68·01	89·45	67·01
31·66	...	·32	...	33·16	42·58	89·81	...	99·45	...	99·08	...	99·15	49·90	99·52	56·08
11·09	3·27	15·75	5·29	20·22	3·22	66·62	...	99·29	30·80	99·63	30·31	99·68	43·58	98·41	29·69
1·67	6·44	10·63	1·23	14·45	2·69	67·01	...	95·54	43·08	98·40	47·54	88·95	66·16	91·89	39·91
24·77	...	30·81	17·20	40·72	40·86	59·04	...	95·28	...	96·95	81·68	9·427	90·2	92·46	85·41
·80	12·64	27·73	...	42·45	...	67·94	...	98·24	88·83	98·34	...	97·40	...	96·78	64·16
7·11	72·28	28·70	...	30·50	...	85·82	...	99·66	82·52	96·21	...	97·83	...	99·76	76·47
7·70	...	17·82	...	31·05	...	...	...	99·11	...	98·98	...	98·75	...	99·71	85·23
3·65	...	7·99	...	39·04	15·04	79·13	...	99·45	...	93·48	...	99·71	91·55	90·96	61·84
13·48	65·32	21·64	1·08	45·08	1·75	...	...	98·67	100·00	96·95	100·00	99·98	100·00	98·75	90·01
1·28	30·46	·98	...	7·82	...	82·87	...	100	77·36	91·71	...	81·55	...	86·96	76·58
92·28	14·20	25·43	19·87	54·21	22·12	70·33	...	94·83	32·70	89·33	40·72	82·56	41·30	99·15	42·98
5·78	12·91	18·54	3·90	23·10	10·05	81·64	...	98·42	77·19	97·91	74·74	96·12	77·82	97·93	62·20

Statement No. VI.—Showing side by side the ratios, per 1,000 of population, of Deaths from

District.	1909-0		1910-11		1911-12		1912-13		
	1	2	3	4	5	6	7	8	9
Patna	1.23	51,589	.30	45,665	.09	48,687	.07	48,768
Gaya62	74,725	.07	68,104	.07	69,923	.008	66,965
Shahabad67	46,311	.04	39,890	.02	36,809	.006	47,086
Saran84	76,930	.07	86,741	.03	83,221	.006	85,339
Champanar44	63,172	.02	59,887	.03	60,354	.07	55,486
Muzaffarpur22	98,808	.06	101,395	.05	102,535	.04	101,405
Darbhanga29	83,005	.07	84,025	.06	83,343	.01	93,546
Monghyr30	79,069	.11	85,497	.09	89,123	.08	84,475
Bhagalpur24	77,682	.26	74,438	.43	80,294	.41	77,274
Purnea36	61,698	.39	63,167	.24	59,409	.14	56,916
Santal Parganas36	67,015	.07	67,446	.08	61,909	.19	60,236
Cuttack12	134,160	.007	139,487	.002	153,747	.01	137,175
Balasore56	44,340	.41	56,052	.19	63,287	.006	68,271
Angul	7,602	...	9,353	...	8,207	...	5,906
Puri16	52,438	.007	53,738	.006	53,619	.02	55,642
Sambalpur04	27,124	.08	33,399	...	33,153	.04	25,955
Hazaribagh42	42,659	.01	50,075	.006	46,544	.02	46,150
Ranchi81	46,968	.07	57,541	.02	48,913	.004	51,096
Palamu	...	1.42	31,133	.11	21,059	.008	24,782	...	28,683
Manbhum21	58,160	.01	60,086	.0006	60,420	.005	61,191
Singhbhum42	17,409	.08	26,593	.004	22,841	.05	20,254
Total45	1,241,997	.10	1,283,638	.08	1,288,620	.06	1,270,859

Small-pox and the number of successful vaccinations during the 10 years ending 1918-19.

1913-14		1914-15		1915-16		1916-17		1917-18		1918-19	
Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
10	11	12	13	14	15	16	17	18	19	20	21
·17	48,480	·48	57,665	·71	68,438	·28	67,870	·15	68,529	·13	68,535
·03	67,817	·10	65,855	·68	75,641	·37	53,139	·18	62,246	·21	56,114
·09	53,812	·32	62,079	·45	65,016	·26	51,176	·10	51,858	·02	41,625
·06	81,699	·06	80,739	·15	79,608	·27	74,895	·16	77,721	·07	66,443
·02	63,100	·10	64,146	·14	68,255	·07	49,091	·11	51,755	·14	50,191
·01	103,052	·09	105,292	·24	104,624	·20	88,702	·09	85,898	·02	86,664
·06	93,735	·24	97,760	·41	95,237	·28	96,020	·07	93,206	·03	86,555
·48	89,024	·46	89,749	·42	87,999	·17	67,229	·10	68,361	·05	56,576
·31	75,244	·35	75,831	·38	74,532	·22	66,899	·22	68,166	·09	59,034
·22	60,587	·30	58,496	·38	51,206	·33	53,018	·64	49,490	·52	54,209
·27	64,815	·18	53,182	·37	57,558	·43	46,826	·14	56,728	·06	46,659
·01	134,227	·06	113,297	·69	89,925	·46	73,415	·81	62,177	·89	51,845
·11	69,059	·90	53,281	·90	38,609	·24	22,178	·03	25,800	·09	20,942
...	7,945	...	7,680	·01	9,686	·15	9,226	·01	6,956	·06	6,751
·07	47,269	·02	38,820	·30	37,595	·52	29,228	·26	34,639	·75	33,543
·05	25,063	·02	27,561	·75	22,606	1·09	19,938	·24	23,343	·07	15,361
·02	51,777	·03	48,299	·49	46,709	·19	42,148	·07	39,761	·07	35,632
·01	49,989	·03	50,958	·12	52,111	·05	43,667	·03	47,094	·04	31,870
·07	21,459	·10	28,327	·17	31,808	·15	25,542	·06	26,893	·06	20,472
·02	61,316	·43	73,369	·63	54,056	·23	49,379	·02	52,189	·05	37,807
·09	23,496	·45	25,909	·28	19,526	·12	17,429	·09	17,872	·10	15,542
·11	1,292,965	·22	1,273,285	·42	1,230,745	·28	1,053,015	·19	1,070,784	·17	942,370

Statement No. VII.--Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1918-19.

District.	Towns.	Number of births during the year ending 31st March 1919.	Number of deaths amongst infants under one year during the year ending 31st March 1919.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Patna	Patna	3,275	630	2,328	1st October 1884.
	Bihar	1,072	171	781	1st April 1887.
	Dinapur	1,010	166	674	28th January 1891.
	Barh	206	77	185	1st April 1887.
	Khagole	198	54	109	12th July 1910.
Total		5,851	1,098	4,077	
Gaya	Gaya	2,203	615	995	1st January 1883.
	Tikari	135	29	102	3rd January 1891.
	Daudnagar	305	67	107	Ditto.
	Total	2,643	711	1,204	
Shahabad	Arrah	1,389	347	1,042	20th July 1885.
	Buxar	434	132	347	1st April 1887.
	Dumraon	436	82	151	Ditto.
	Jagadispur	279	54	267	20th December 1890.
	Sassaram	928	552	551	1st April 1887.
	Bhabhua	186	46	147	Ditto.
	Total	3,652	1,213	2,505	
Total of Patna Division.		12,146	3,022	7,786	
Saran	Chapra	1,434	347	560	1st April 1887.
	Revelganj	414	83	221	12th December 1890.
	Siwan	448	94	243	1st April 1887.
	Total	2,296	524	1,024	
Champanar	Motihari	420	93	348	1st April 1887.
	Bettiah	814	226	310	Ditto.
	Total	1,234	319	658	

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1918-19—contd.

District.	Towns.	Number of births during the year ending 31st March 1919.	Number of deaths amongst infants under one year during the year ending 31st March 1919.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Muzaffarpur	Muzaffarpur	1,169	84	1,060	1st January 1886.
	Sitamarhi	379	72	218	1st April 1887.
	Hajipur	653	197	252	1st May 1890.
	Lalganj	293	72	214	1st April 1887.
Darbhanga	Total	2,494	425	1,744	
	Darbhanga	2,030	374	574	24th May 1884.
	Roserha	301	62	96	3rd January 1891.
	Samastipur	233	58	54	25th July 1910.
	Madhubani	515	58	48	1st April 1887.
Monghyr	Total	3,079	552	772	
	Total of Tirhut Division.	9,103	1,820	4,198	
Bhagalpur	Monghyr	1,768	380	631	15th November 1882.
	Jamalpur	1,060	241	632	Ditto.
	Total	2,828	621	1,263	
Purnea	Bhagalpur	1,616	335	679	15th February 1884; withdrawn on 16th October 1895; re-extended on 18th August 1898.
	Colgong	167	47	39	Ditto; re-extended on 19th December 1901.
	Total	1,783	382	718	
Purnea	Purnea	296	70	163	1st July 1887.
	Kishanganj	206	35	67	12th November 1892.
	Katihar	333	40	77	8th August 1910.
	Forbesganj	133	31	78	9th August 1912.
	Total	968	176	385	

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1918-19—contd.

District.	Towns.	Number of births during the year ending 31st March 1919.	Number of deaths amongst infants under one year during the year ending 31st March 1919.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Santal Parganas ...	Sahibganj ...	462	101	263	1st May 1884.
	Deoghar ...	219	34	61	Ditto.
	Dumka ...	191	44	63	Notifications, dated the 9th April 1884, and 3rd August 1910.
	Madhupur ...	236	46	48	22nd August 1910,
	Total ...	1,108	225	435	
Cuttack ...	Total of Bhagalpur Division.	6,687	1,404	2,801	
	Cuttack ...	1,061	235	469	1st September 1884,
	Kendrapara ...	384	106	144	7th February 1888,
	Jajpur ...	334	87	69	Ditto,
	Total ...	1,779	428	682	
Balasore ...	Balasore ...	457	227	93	7th February 1888,
Puri ...	Puri ...	650	202	201	Ditto.
Sambalpur ...	Sambalpur ...	239	98	160	7th March 1895.
Hazaribagh ...	Total of Orissa Division.	3,125	955	1,156	
	Hazaribagh ...	536	123	247	1st January 1885.
	Chatra ...	293	76	140	1st August 1885.
	Giridih ...	252	43	109	8th September 1910,
	Total ...	1,111	242	496	
Ranchi ...	Ranchi ...	722	118	780	1st April 1887.
	Lohardaga ...	183	19	126	25th June 1892,
	Total ...	855	137	906	

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1918-19—concl.

District.	Towns.	Number of births during the year ending 31st March 1919.	Number of deaths amongst infants under one year during the year ending 31st March 1919.	Number of successful vaccinations amongst infants under one year during the year ending 31st March 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Palamu	Daltonganj	269	48	107	9th October 1890.
Manbhum	Purulia	356	61	310	1st January 1887.
	Raghunathpur	156	43	17	9th February 1894.
	Jhalda	184	24	63	9th July 1892.
	Total	696	128	390	
Singbhum	Chaibassa	308	79	198	20th June 1892.
	Chakradharpur	108	20	28	13th January 1919.
	Total	416	99	226	
	Total of Chota Nagpur Division.	3,078	606	2,018	
	Total for the Province	34,139	7,807	17,939	

Provincial Statement showing the different kinds of lymph

District.	Primary vaccination.											
	Direct from the calf.					With lanoline or glycerine lymph.					Arm-to-arm	
	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.	Unsuccessful.	Unknown.	Percentage of successful cases.	Total.	Successful.
1	2	3	4	5	6	7	8	9	10	11	12	13
Patna	68,726	67,907	487	332	98.81	...	...
Gaya	55,073	54,723	276	74	99.36	...	...
Shahabad	41,447	41,154	216	77	99.29	...	...
Saran	67,255	66,022	539	694	98.16	...	...
Champaran	50,41	49,701	186	154	99.31	...	...
Muzaffarpur	86,869	86,212	591	66	99.24	...	...
Darbhanga	86,831	86,403	273	35	99.64	...	...
Monghyr	56,502	56,477	9	16	99.95	...	...
Bhagalpur	56,811	56,628	80	103	99.67	...	...
Purnea	44,715	44,471	208	36	99.45	...	...
Santal Parganas	46,203	45,982	85	136	99.52	...	...
Cuttack	50,853	50,048	198	607	98.41	...	...
Balasore	19,995	18,974	191	830	94.89	...	...
Angul	4,368	4,039	221	108	92.46	...	...
Puri	34,374	33,269	360	745	96.78	...	...
Sambalpur	15,268	15,153	35	80	99.24	...	...
Hazaribagh	35,304	35,142	154	8	99.54	...	...
Ranchi	30,369	30,361	7	1	99.97	...	...
Palamu	16,58	16,114	57	87	99.11	...	...
Manbhum	36,630	35,450	498	682	96.78	...	...
Suri	15,192	15,064	95	33	99.15	...	...
TOTAL	919,084	909,294	4,886	4,904	98.93	...	...

II.

sed and their rates of success during the year 1918-19.

Vaccination.		Revaccination.																															
		Direct from the calf.						With lanoline or glycerine lymph.						Arm-to-arm vaccination.																			
Unsuccessful.	Unknown.	Percentage of successful cases. ¹		Total.		Successful.		Unsuccessful.		Unknown.		Percentage of successful cases.		Total.		Successful.		Unsuccessful.		Unknown.		Percentage of successful cases.		Total.		Successful.		Unsuccessful.		Unknown.		Percentage of successful cases.	
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43				
...	1,127	628	481	18	55.72	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1,588	1,391	151	46	87.59	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	609	471	139	59	70.40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	705	421	169	115	59.71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	983	490	252	111	49.84	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	967	452	392	123	46.74	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	315	152	117	46	48.25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	192	99	91	2	51.56	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	3,849	2,406	1,359	84	62.50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	14,532	9,738	4,685	109	67.01	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1,207	677	508	22	56.03	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	6,044	1,797	3,025	1,222	29.73	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	4,931	1,968	606	2,357	39.91	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	3,174	2,712	368	94	85.44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	427	274	82	71	64.16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	285	208	64	13	72.98	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	575	490	65	20	85.22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	2,440	1,509	90	21	61.84	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	4,505	4,358	84	63	96.73	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	3,712	2,357	1,111	24	63.49	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1,112	478	554	80	42.98	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	53,339	33,076	15,343	4,920	62.01	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

